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Editorial

Pros and cons of online cognitive–behavioural therapy

Gerhard Andersson and Pim Cuijpers

**Summary**

Online cognitive–behavioural therapy (CBT) for depression has the potential to serve as an important addition to the care of people with mild to moderate depression. Although some studies show promising results, the need for proper diagnoses and human guidance must be considered when

interpreting the modest effects found in studies with little or no guidance from a therapist.

Declaration of interest

None.

Gerhard Andersson (pictured) is Professor of Clinical Psychology at Linköping University, Sweden. He is also Guest Professor at Karolinska Institutet, Stockholm, Sweden. Pim Cuijpers is Professor of Clinical Psychology and Head of the Department of Clinical Psychology at the Vrije Universiteit Amsterdam, The Netherlands. Both are active researchers in the field of online cognitive–behavioural therapy.

In research on the effects of cognitive–behavioural therapy (CBT) there has been a long history of investigating different ways of treatment delivery, including individual, group, telephone and computer-delivered CBT. The most recent addition to this is to use computers and the internet.¹ In a recent issue of the *British Journal of Psychiatry*, promising follow-up data were presented from a previous trial on the effects of a self-administered internet programme (MoodGYM) for symptoms of depression.² As major depression is a costly disorder, both in terms of human suffering and from an economic perspective, any effort to disseminate evidence-based low-cost interventions represents a welcome contribution to healthcare. If it should be the case that online automated self-help programmes work and also lead to long-term benefits, we would definitely be in a position to consider not if, but how soon, we should implement this treatment on a wide scale. However, we are not there yet and in this editorial we will comment on where we believe the new field of online CBT stands now and what should be considered when evaluating the emerging evidence in favour of online CBT.

Public health implications of online automated self-help programmes

Even a minor improvement of depression symptoms could have a large impact on the disease burden of depression if the treatment is safe and cheap. This is especially true when such an intervention can be disseminated to large parts of the general population, as is the case with online automated self-help programmes. It could very well be that self-administered programmes such as MoodGYM could serve as a starting point for seeking more effective evidence-based treatment. As standards for dissemination and consumer information regarding internet treatments are yet to be developed, the study on 1-year outcome from the MoodGYM researchers is a welcome addition.² However, MoodGYM is probably not as effective as other online depression programmes that are delivered with therapist guidance,³ at least when it comes to diagnosed major depression. This leaves us with numerous opportunities and challenges in the future. Stepped-care approaches

could include ‘steps’ of online treatment with gradually increasing support and programme length, and we also would like to see exploration of combined treatments where online CBT is combined with selective serotonin reuptake inhibitors or other evidence-based approaches for the treatment of depression. Such stepped-care delivery would not only provide opportunities to deliver CBT on a large scale at relatively low cost, but would also make it possible to follow up patients more systematically and perhaps offer new possibilities for relapse prevention.

The field of online/internet-delivered CBT is growing rapidly with several randomised trials appearing each year. Although the quality of these trials is not always good, the speed of the research makes online CBT an alternative to consider in evidence-based treatment guidelines,^{1,4} hence increasing the possibility that online CBT becomes part of regular healthcare. Public health implications of making evidence-based psychological treatments available on the internet could be substantial in terms of reaching people in need and saving costs. However, some of the published trials on online CBT deal not with depression as a medical diagnosis, but rather with mild subclinical symptoms of depression. This fact together with some other potential problems with online CBT will be commented on next.

Is it really depression?

Readers of this *Journal* can most likely recognise a ‘depressed’ patient in front of them and would assume that a paper mentioning depression in its title is usually about clinician-diagnosed depression. However, most studies of online CBT for depression deal with self-reported symptoms of depression and not diagnosed depression in the strict sense. Community screening questionnaires can be helpful and can to some extent identify depressed patients, but they do not replace diagnosis made by a clinician. Simply put, we cannot know if people included in the majority of trials of online CBT were clinically depressed or not,⁵ and this critique is also relevant for studies of MoodGYM.^{2,6} Clinicians in psychiatry and general practice will need more convincing evidence that online CBT can help their depressed patients. On the other hand, subclinical levels of depressive symptoms might be a worthwhile target for public health interventions, and it is possible that automated online CBT programmes could be suitable for that purpose. However, especially in research, but also in the clinic, it is important to know the actual diagnoses of patients, in order to get an estimate of the clinical relevance of the populations and the impact of the intervention.

Different ways of delivering CBT over the internet

Although online CBT is a new field, there are already many different approaches available, even for the treatment of depression; a book-length review was recently presented by Marks *et al.*⁷ and a controlled trial has been published in the *Journal* which involved guided self-help using support via email.⁸ In fact, this trial was found to have had substantially larger effects than other internet treatments for depression in a systematic review.³ More recently, large within-group effect sizes were reported in a study which compared group and internet treatment.⁹ This is not the only trial showing equal or even slightly superior long-term effects of online *v.* face-to-face treatment.¹⁰

A critical issue here is whether different online depression treatments differ in terms of effects, and how these differences can be explained. First, effect sizes can be small in some programmes, which might be explained by the characteristics of the sample included. Second, drop-out rates can be substantial outside of a research trial,¹¹ even though acceptable drop-out rates were obtained in the original research trial.⁶ Third, and perhaps this pertains to other online treatments as well, studies on long-term effects might not be valid, as help-seeking for regular CBT can increase following online CBT.¹² In summary, it is still unclear whether mainly self-administrated programmes are as effective as other interventions in the treatment of symptoms of depression, and it is even less clear regarding clinician-diagnosed depression.

What is the role of the therapist?

Mackinnon *et al.*² commented that the impact of the telephone support given in the trial must be considered when interpreting their findings. A growing database on online CBT clearly shows that some form of guidance is needed, in particular for patients with diagnosed major depression. In fact, the published evidence regarding online CBT for depression without therapist support is extremely weak and drop-out rates are unacceptably high. Spek *et al.*, in their meta-analysis, clearly showed that programmes without support were markedly less effective.³ However, even with therapist support, CBT over the internet is still saving much of the therapist's time. This is a different story to claiming that a non-guided programme for which drop-out rates are extremely high¹³ is effective, with less than a quarter of the randomised participants completing the programme, rendering interpretation of the effects impossible.

Missing data have huge implications for data analyses of trials, and although the approach suggested by Mackinnon *et al.* arguably can handle this, this does not solve the basic problem of missing data. Any method of dealing with missing data, even the most sophisticated ones, cannot solve the problem that we do not know what has happened to the people who have dropped out. We can estimate what would have happened if they had not dropped out, but that remains an estimate, nothing more. When drop-out rates are very high, uncertainty regarding the accuracy of estimates increases proportionately, and no statistical method can solve this problem. An additional problem is that studies that include regular clinic use (e.g. a Dutch programme called Interapy¹⁴) have much lower drop-out rates in their online CBT treatments,

points at the many problematic issues that this type of research is struggling with, including loss of data, diagnostic issues, small effects and acknowledging the need for human support in a condition such as depression, where motivation to change is a major issue. These reservations should be discussed openly by researchers and clinicians in the e-health field. However, once these issues are resolved, online CBT should be considered as part of regular healthcare at various levels, including general practice settings, where most patients with mild to moderate depression are seen and treated.

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Conclusion

Recent research suggests that even very minimal interventions can have significant effects on depressive symptoms. However, it also